

WHAT IS CLAIMED IS:

1. A collapsible vehicle bed storage assembly mountable on a vehicle having a generally horizontal storage bed surrounded by a front wall, a first sidewall, a second sidewall and a back wall, said assembly comprising:

a first panel having an outer face and inner face, a first end, a second end, a first side and a second side, said first end of said first panel secured to one of said walls so as to be rotatable about a generally horizontal axis; and

a second panel having an outer face, an inner face, a first end, a second end, a first side, and a second side, said first end of said second panel secured to said second end of said second panel so as to be rotatable about a generally horizontal axis;

said assembly having a collapsed position in which said first panel and said second panel are generally vertical and said inner face of said first panel and said inner face of said second panel face one another, and a deployed position in which said first panel is generally horizontal and said second panel is generally vertical, said outer face of said first panel facing outward away from said storage bed and said outer face of said second panel facing outward away from said first panel.

2. A collapsible vehicle bed storage assembly mountable on a vehicle having a generally horizontal storage bed surrounded by a front wall, a first sidewall, a second sidewall and a back wall, said assembly comprising:

a first panel having an outer face and inner face, a first end, a second end, a first side and a second side, said first end of said first panel secured to one of said walls so as to be rotatable about a generally horizontal axis; and

a second panel having an outer face, an inner face, a first end, a second end, a first side, and a second side, said first end of said second panel secured to said second end of said second panel so as to be rotatable about a generally horizontal axis;

said first panel and said second panel being locked in a folded-together orientation wherein said inner face of said second panel faces said inner face of said first panel, said assembly being freely rotatable about said first end of said first panel, while said first panel and said second panel remain locked in said orientation.

3. The assembly as defined in Claim 2, wherein said assembly is rested against one of said walls in a substantially vertical position.

4. The assembly as defined in Claim 1, further comprising means for locking said assembly in the deployed position.

5. The assembly as defined in Claim 4, wherein said means for locking is operable by a key and/or by the input of a combination of indicia.

6. The assembly as defined in Claim 1, further comprising means for locking said assembly in the collapsed position.

7. The assembly as defined in Claim 6, wherein said means for locking is operable by a key and/or by the input of a combination of indicia.

8. The assembly as defined in Claim 1, further comprising means for locking said first panel and said second panel in an orientation wherein said inner face of said second panel faces and is substantially parallel to said inner face of said first panel, said assembly being freely rotatable about said first end of said first panel, while said first panel and said second panel remain locked in said orientation.

9. The assembly as defined in Claim 1, further comprising:

a first retaining portion located on said first panel;

a second retaining portion located on said second panel;

said first retaining portion and said second retaining portion being selectively engageable to lock said first panel and said second panel in a folded-together orientation, said assembly being freely rotatable about said first end of said first panel, while said first panel and said second panel remain locked in said orientation.

10. The assembly as defined in Claim 1, wherein said assembly further comprises:

at least one opening in one of said first side or said second side of said first panel;

at least one opening in one of said first side or said second side of said second panel; and

at least one rigid member selectively extendable through said openings in said first panel and said second panel;

said rigid member locking said first panel and said second panel in an orientation wherein said inner face of said second panel faces and is substantially parallel to said inner face of said first panel, said assembly being freely rotatable about said first end of said first panel, while said first panel and said second panel remain locked in said orientation.

11. The assembly as defined in Claim 1, wherein said assembly further comprises:
- at least one opening in said first side of said first panel;
 - at least one opening in said second side of said first panel;
 - at least one opening in said first side of said second panel;
 - at least one opening in said second side of said second panel;
 - at least one rigid member selectively extendable through said openings in said first sides of said first and second panel; and

at least one rigid member selectively extendable through said openings in said second sides of said first and second panel;

said rigid members locking said first panel and said second panel in an orientation wherein said inner face of said second panel faces and is substantially parallel to said inner face of said first panel, said assembly being freely rotatable about said first end of said first panel, while said first panel and said second panel remain locked in said orientation.

12. The assembly as defined in Claim 1, further comprising:
- a first interlock surface located on said first panel; and
 - a second interlock surface located on said second panel;

said first and second interlock surfaces being interlockable to lock said first panel and said second panel in a folded-together orientation, said assembly being freely rotatable about said first end of said first panel, while said first panel and said second panel remain locked in said orientation.

13. The assembly as defined in Claim 1, further comprising:

at least one interlock surface attached to said first panel adjacent to said inner face of said first panel.

14. The assembly as defined in Claim 13, wherein said retaining surface extends inward toward the center of said inner face of said first panel, said retaining surface being of a sufficient length, and formed of material sufficiently resilient, to create an interference fit with one of said second end, said first side or said second side of said second panel when rotating said second panel to or from a closed position against and substantially parallel to said first panel.

15. The assembly as defined in Claim 1, wherein said first end of said first panel is secured along said upper portion of said front wall directly behind a passenger compartment of said vehicle.

16. The assembly as defined in Claim 1, wherein said assembly when in the closed position exposes substantially the entire horizontal surface of the vehicle storage bed to the placement of loads directly upon it.

17. The assembly as defined in Claim 1, further comprising a first storage bin mounted along said front wall adjacent to said first sidewall, a second storage bin mounted along said front wall adjacent to said second sidewall, wherein said first panel and said second panel are mounted along said front wall between said first storage bin and said second storage bin.

18. The assembly as defined in Claim 1, wherein said first end of said first panel is rotatably attached to a top surface of said front wall.

19. The assembly as defined in Claim 1, wherein said first end of said first panel is rotatably attached to an inward-facing surface of said first sidewall and to an inward-facing surface of said second sidewall.

20. The assembly as defined in Claim 17, wherein said first end of said first panel is rotatably attached to an inward-facing surface of said first storage bin and to an inward-facing surface of said second storage bin.

21. The assembly as defined in Claim 1, wherein said first panel and said second panel form an interior angle of less than or equal to 150° when in said deployed position.

22. The assembly as defined in Claim 1, wherein said first panel and said second panel enclose a volume which is substantially equal to the height of said first and second

sidewalls of said vehicle storage bed, along substantially the entire length and width of said volume.

23. The assembly as defined in Claim 1, wherein said first panel and said second panel enclose a volume of at least 12,500 cubic inches.

24. The assembly as defined in Claim 1, wherein said first panel further comprises:

at least one opening intersecting said outer face and said inner face of said first panel; and

at least one door rotatably attached to said first panel and adapted to cover said at least one opening when in a closed position against said first panel.

25. The assembly as defined in Claim 1, wherein said first panel and/or said second panel comprises:

a frame element in the form of a sheet of substantially rigid material, having a number of integrally formed stiffening elements which are raised and/or in relief with respect to immediately adjacent areas of said sheet, including a recessed area; and

a substantially planar cover composed of substantially rigid material, the cover being adapted to fit into said recessed area and be securely affixed to said frame element.

26. A collapsible vehicle bed storage assembly mountable on a vehicle having a generally horizontal storage bed surrounded by a front wall, a first sidewall, a second sidewall and a back wall, said assembly comprising:

a first panel having an outer face and inner face, a first end, a second end, a first side and a second side, said first end of said first panel secured to one of said walls so as to be rotatable about a generally horizontal axis;

a second panel having an outer face, an inner face, a first end, a second end, a first side, and a second side, said first end of said second panel secured to said second end of said second panel so as to be rotatable about a generally horizontal axis; and

at least one track mounted in the vehicle storage bed on one side of the assembly and at least one track follower mounted on the corresponding side of said

second panel, said track and said follower cooperating to control the deployment of said assembly;

said assembly having a collapsed position in which said first panel and said second panel are generally vertical and said inner face of said first panel and said inner face of said second panel face one another, and a deployed position in which said first panel is generally horizontal and said second panel is generally vertical, said outer face of said first panel facing outward away from said storage bed and said outer face of said second panel facing outward away from said first panel.

27. The assembly as defined in Claim 26, wherein said track is curved.

28. The assembly as defined in Claim 26, wherein said track has a relatively straight, substantially horizontal upper portion.

29. The assembly as defined in Claim 28, wherein said track further comprises a relatively straight, substantially vertical lower portion.

30. The assembly as defined in Claim 26, further comprising a first storage bin mounted along said front wall adjacent to said first sidewall, a second storage bin mounted along said front wall adjacent to said second sidewall, wherein said first panel and said second panel are mounted along said front wall between said first storage bin and said second storage bin, and wherein said at least one track is located on an inward-facing side of said first storage bin and/or said second storage bin.

31. The assembly as defined in Claim 30, wherein said at least one track is integral with an inward-facing side of said first storage bin and/or said second storage bin.

32. The assembly as defined in Claim 30, wherein one or both of said first storage bin and said second storage bin further comprises an opening on a side of said storage bin, and said opening is at least partially covered by a net.

33. The assembly as defined in Claim 26, wherein said at least one track includes a first portion and a second portion, wherein said first portion defines a first partial path of movement of said follower, said second portion defines a second partial path of said follower, and said second partial path is closer to said bed than said first partial path.

34. The assembly as defined in Claim 33, wherein one of said first partial path and said second partial path is closer to said front wall than the other of said first partial path and said second partial path.

35. The assembly as defined in Claim 34, wherein said first partial path is closer to said front wall than said second partial path.

36. The assembly as defined in Claim 35, wherein said track further comprises:
a first cam surface, said first cam surface directing said track follower downward as said track follower is moved in a direction associated with placing said assembly in said collapsed position, thereby permitting a simultaneous downward angular displacement of said assembly.

37. The assembly as defined in Claim 36, wherein said track further comprises:
a second cam surface, said second cam surface directing the track follower upward and closer to an axis of rotation of said first panel as said track follower is moved in a direction associated with placing the assembly in the collapsed position, thereby reducing an included angle formed by said first panel and said second panel.

38. A method for enclosing a volume of a vehicle bed having a generally horizontal storage bed surrounded by a front wall, a first sidewall, a second sidewall and a back wall, said method comprising the steps of:

rotating an assembly comprising a first panel and a second panel folded together, the first panel being rotatably secured to one of said walls at a first end of the first panel, the second panel being rotatably secured to a second end of the first panel opposite the first end, from a vertical position;

rotating the second panel away from the first panel so that the first panel and the second panel are no longer folded together; and

placing an end of the second panel against the vehicle bed with the second panel in a substantially vertical position and the first panel in a substantially horizontal position.